

Appl. No. 09/230,195
Amdt. dated January 26, 2004
Amendment under 37 CFR 1.116 Expedited Procedure
Examining Group

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An HIV-based cell transduction vector comprising a vector nucleic acid encoding:

an HIV packaging site;
a first viral inhibitor subsequence;
a splice donor site ~~subsequence~~;
a splice acceptor site ~~subsequence~~;
an HIV Rev binding subsequence; and,
a promoter subsequence;

wherein:

the first viral inhibitor subsequence is located between the splice donor site ~~subsequence~~ and the splice acceptor site ~~subsequence~~;

the splice donor site ~~subsequence~~ and the splice acceptor site ~~subsequence~~ permit splicing of the first viral inhibitor subsequence from the vector nucleic acid in the nucleus of a cell; and,

the promoter subsequence is operably linked to the first viral inhibitor subsequence.

2. (previously presented) The cell transduction vector of claim 1; wherein the vector nucleic acid is translocated to the cytoplasm in the presence of an HIV Rev protein, and wherein splicing of the first viral inhibitor sequence is inhibited by Rev.

3. (cancelled)

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4. (original) The cell transduction vector of claim 1, wherein the first viral inhibitor comprises a nucleic acid subsequence encoding a ribonuclease selected from the pancreatic RNase A superfamily.
5. (original) The cell transduction vector of claim 1, wherein the first viral inhibitor comprises a nucleic acid subsequence encoding a ribonuclease selected from the group of ribonucleases consisting of Onconase, modified Onconase, and EDN.
6. (original) The cell transduction vector of claim 1, wherein the first viral inhibitor subsequence encodes a transdominant protein selected from the group of transdominant proteins consisting of transdominant Gag, transdominant Tat, and transdominant Rev.
7. (original) The cell transduction vector of claim 1, wherein the vector further comprises a cell binding ligand selected from the group consisting of transferrin, *c-kit* ligand, an interleukin and a cytokine.
8. (original) The cell transduction vector of claim 1, wherein the promoter is selected from the group of promoters consisting of a retroviral LTR promoter, a constitutive promoter, an inducible promoter, a tissue specific promoter, a CMV promoter, a probasin promoter and a tetracycline-responsive promoter.
9. (original) The cell transduction vector of claim 1, wherein the vector further comprises an encephalomyocarditis virus internal ribosome entry site (IRES).
10. (original) The cell transduction vector of claim 1, wherein the vector nucleic acid further encodes a second viral inhibitor.
11. (previously presented) The cell transduction vector of claim 9, wherein the vector nucleic acid further encodes a second viral inhibitor, wherein expression of the second viral inhibitor is controlled by the IRES.

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12. (original) The cell transduction vector of claim 1, wherein vector nucleic acid further encodes a multicistronic mRNA with a first open reading frame and a second open reading frame, which multicistronic mRNA comprises an IRES sequence which directs translation of the second open reading frame in a cell.

13. (original) The cell transduction vector of claim 11, wherein the first open reading frame encodes a viral inhibitor.

14. (previously presented) The cell transduction vector of claim 1, wherein the vector comprises an HIV retroviral particle.

15. (original) The cell transduction vector of claim 1, wherein the vector nucleic acid is packaged into an HIV particle in a cell infected by a wild-type HIV.

16. (original) The cell transduction vector of claim 1, wherein the vector nucleic acid is packaged in a liposome.

17. (previously presented) The cell transduction vector of claim 14, wherein the HIV retroviral particle is pseudotyped for transduction into hematopoietic stem cells.

18. (cancelled)

19. (original) The cell transduction vector of claim 1, wherein the vector nucleic acid further encodes a reporter gene.

20. (previously presented) The cell transduction vector of claim 1, wherein the cell transduction vector is selected from the group of cell transduction vectors consisting of pBAR, pBAR-ONC, and pBAR-EDN.

21. (original) The cell transduction vector of claim 1, wherein the viral inhibitor is an oncogene inhibitor.

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22. (original) The cell transduction vector of claim 1, wherein the vector further comprises an oncogene inhibitor.
23. (original) The cell transduction vector of claim 22, wherein the oncogene inhibitor is a nucleic acid encoding an inhibitor selected from the group of inhibitors consisting of an antibody which specifically binds a Ras protein and an RNase.
24. (original) The cell transduction vector of claim 22, wherein the oncogene inhibitor is an RNase from the RNase A superfamily.
25. (original) A cell transduction vector comprising a nucleic acid subsequence encoding an EDN protein, which subsequence is operably linked to a promoter, wherein said cell transduction vector inhibits the replication of a retrovirus in a cell transduced by the cell transduction vector.
26. (previously presented) The cell transduction vector of claim 25, wherein the vector is pBAR-EDN.
27. (original) The cell transduction vector of claim 25, wherein the cell is a CD4⁺ cell
28. (original) The cell transduction vector of claim 25, wherein the cell is a stem cell.
29. (original) The cell transduction vector of claim 25, wherein the vector inhibits the replication of HIV in the cell.
30. (original) The cell transduction vector of claim 25, wherein the vector nucleic acid is packaged in a retroviral particle.
31. (original) The cell transduction vector of claim 25, wherein the vector is packaged in a liposome.

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32. (original) The cell transduction vector of claim 25, wherein the vector comprises a cell binding ligand selected from the group of cell binding ligands consisting of transferrin, kit-ligand, an interleukin, and a cytokine.

33. (original) The cell transduction vector of claim 25, wherein the vector nucleic acid further encodes a subsequence encoding a retroviral chromosome integration subsequence.

34. (previously presented) The cell transduction vector of claim 25, wherein the vector further comprises a multicistronic mRNA which encodes a first open reading frame and a second open reading frame, which multicistronic mRNA is operably linked to a promoter, wherein the multicistronic mRNA comprises a subsequence encoding EDN.

35. (original) The cell transduction vector of claim 25, wherein the promoter is selected from the group consisting of a tetracycline responsive promoter, a probasin promoter, and a CMV promoter.

36. (cancelled)

37. (previously presented) A method of transducing a cell with a nucleic acid encoding a viral inhibitor comprising contacting the cell with the cell transduction vector of claim 1, wherein the cell is transduced *in vitro*.

38. (previously presented) A method of inhibiting the growth of HIV in a cell comprising transducing the cell with the cell transduction vector of claim 1, wherein the cell is transduced *in vitro*.

39. (cancelled)

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40. (previously presented) The method of claim 38, wherein the cell is selected from the group of cells consisting of transferrin receptor⁺ cells, CD4⁺ cells and CD34⁺ hematopoietic stem cells.

41. (previously presented) An isolated cell comprising the cell transduction vector of claim 1.

42. (previously presented) The cell of claim 41, wherein the cell is selected from the group of cells consisting of CD4⁺ cells, CD34⁺ hematopoietic stem cells, and transferrin receptor⁺ cells.